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Application No.: 10/733,789

Docket No.: MWS-087

REMARKS

In the foregoing amendments, claims 35, 39-42, 44, 49, 52-53, 55-60, 62-63, 67, 70-74 and 77 have been amended. Claims 1-83 are currently pending, of which claims 1, 39 and 77 are independent. No new matter has been added.

I. Double Patenting

The Examiner has provisionally rejected claims 6, 44, 78 and 82 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 48 of copending Application No. 11, 025, 218 (Office Action, paragraph 3).

The Examiner has provisionally rejected claims 1, 39 and 77 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 10 and 34 of copending Application No. 10,733,788 (Office Action, paragraph 4).

Applicants are filing a terminal disclaimer herewith in response to the provisional rejection of claims 1, 6, 39, 44, 77-78 and 82 on the ground of non-statutory obviousness-type double patenting. Accordingly, Applicants respectfully request the Examiner to reconsider and to withdraw the objection to claims 1, 6, 39, 44, 77-78 and 82.

II. Objections to the Claims

The Examiner objected to claims 35 and 73 because of a misspelled word (Office Action, paragraph 5). Applicants have amended claims 35 and 73 herein by correcting the spelling of the word "representative." Accordingly, Applicants respectfully request the Examiner to reconsider and to withdraw the objection to claims 35 and 73.

III. Summary of Claim Rejections

Claims 77-83 stand rejected under 35 USC §101 as being directed to non-statutory subject matter.

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Claims 1-83 stand rejected under 35 USC §102(b) as being anticipated by *The MathWorks "Simulink: Model-based and System-based Design," Using Simulink, Version 5*, copyright 1990-2002, last printed July 2002, ch. 2-11, 13-14 (hereafter "Simulink5").

These rejections will be discussed separately below.

IV. Claim Rejections under 35 USC §101

The Examiner rejected claims 77-83 under 35 U.S.C. §101 as being directed to non-statutory subject matter (Office Action, paragraph 7). More specifically, the Examiner indicated the claims failed to recite a hardware embodiment for the system. Applicants have amended independent claim 77 herein so that it specifically recites that the claimed system is in "an electronic device." Accordingly, Applicants request reconsideration of the outstanding rejection of claim 77 under 35 U.S.C. §101.

Claims 78-83 depend from independent claim 77 and, as such, the amendment to claim 77 applies to claims 78-83. Accordingly, Applicants also respectfully request reconsideration and allowance of claims 78-83.

V. Claim Rejections under 35 USC §102

The Examiner rejected claims 1-83 under 35 U.S.C. §102(b) as being anticipated by Simulink5 (Office Action, paragraph 9). Applicants respectfully traverse the rejection for the reasons set forth below.

Independent claim 1 recites:

"In a graphical modeling and execution environment, a method comprising the steps of:

providing a model view and an execution list view of a model being executed, said model view showing a plurality of components of said model, said execution list view showing an execution list depicting the execution order of methods called during the execution of a time step of said model, said model view interfaced with a debugger; and

indicating visually the state of the execution list on said model view" [emphasis added].

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Applicants respectfully submit that the Simulink5 reference fails to disclose at least the following elements of claim 1: (a) "an execution list depicting the execution order of methods called during the execution of a time step;" and (b) "indicating visually the state of the execution list on said model view." As will be explained in more detail below, these elements are not disclosed by Simulink5.

Applicants' invention exposes debugging and/or execution information to a user executing a model. As recited in claim 1, this execution information includes an execution list view which depicts the execution order of methods called during the execution of a time step during model execution. As noted in Applicants' Background section at page 3, lines 4-13:

Elements of a block diagram such as blocks, subsystems and the underlying model contain a collection of methods that are invoked by the execution engine at certain times during the simulation for different purposes, e.g., to generate an output, to update the state, and to compute derivatives. Because conventional debuggers expose only a small part of the entire set of methods that have to be invoked by the execution engine in order to execute a block diagram (e.g. the output method of blocks), users are only able to stop the execution of a block diagram at a block's output method and inspect data relevant to a block with respect to its output method. This is a major restriction in debugging a model's execution since the unexpected behavior may not be observable at a block's output method. [emphasis added]

By exposing the execution list of methods to the user, Applicants' invention allows the user to receive information other than the results of an output method for a block at the end of a given time step.

The Simulink5 reference cited by the Examiner is generally directed to the use of SIMULINK in modeling and simulating dynamic systems. The Examiner identified pages 2-10, 2-11, 2-19, 2-20 and page 5-16 -> 5-17 in the Simulink5 reference (Office Action, paragraph 9) as disclosing "an execution list view showing an execution list depicting the execution order of methods called during the execution of a time step of said model," as required by claim 1.

Applicants respectfully disagree.

The cited sections of Simulink5 fail to disclose the "an execution list depicting the execution order of methods" required by Applicants' claim 1. Rather, the cited sections discuss

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generally elements of the SIMULINK® software offered for sale by The MathWorks, Inc. of Natick, Massachusetts. More specifically, on page 13-21, Simulink5 states: "During simulation, Simulink maintains a list of blocks sorted by execution order. This list is called the sorted list. In GUI mode, the debugger displays the sorted list in its Execution Order panel." [emphasis added] Thus, the discussion of the 'sorted list' in Simulink5 discusses maintaining and displaying a list of blocks sorted by execution order. In contrast, claim 1 requires displaying an execution list of methods called during execution of the model. Since there may be multiple methods within each block in the model that need to execute in a certain order for the model to execute properly, a list of the execution order of blocks for a model is not the same and does not anticipate a list of an execution order of methods for a model.

In the Office Action, the Examiner also pointed to the discussion of a "Math Function block," "Sum block," "Product block," etc, as disclosing the "execution list" required by claim 1 (Office Action, paragraph 9). The aforementioned blocks, referenced by the Examiner in the Simulink5 reference, are examples of blocks, not methods. A block is not synonymous with a method. Blocks may include more than one method and a method may execute multiple times in different contexts during a time step. For example, see Figures 16A and 16B and the description thereof in Applicants' specification on page 39, line 18 *et seq.* Applicants respectfully draw the Examiner's attention to the lack of one-to-one correspondence between the blocks in Figure 16A and the methods in the execution list of Figure 16B, as there are many more methods in the execution list than there are blocks in the model. Applicants thus contend that the aforementioned list of blocks cannot be considered an execution list view as recited by claim 1. This section of Simulink5 therefore also fails to disclose the required "execution list depicting the execution order of methods" required by claim 1.

The Examiner also identified pages 5-16 -> 5-24 and pages 13-20 -> 13-26 of Simulink5 (Office Action, paragraph 9, page 6) as disclosing the claim element of: "indicating visually the state of the execution list on said model view." Applicants respectfully disagree.

The Simulink5 reference states on page 5-17: "To display the execution order of blocks during simulation, select Execution order from the Simulink Format menu. Selecting this option causes Simulink to display a number in the top right corner of each block in a block diagram. The number indicates the execution order of the block relative to other blocks in the diagram."

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The cited section is discussing the block execution order, not the execution order of the methods in the model during each time step. The display of the *state of the execution order of methods* (as recited by claim 1) is different from the display of the *execution order of each block* (as discussed by Simulink5), and the reference thus fails to disclose the required claim element of "indicating visually the state of the execution list on said model view."

With regard to pages 13-20 -> 13-26 of Simulink5 that were cited by the Examiner, page 13-20 of the Simulink5 reference states "The states debug command lists the current values of the system's states in the MATLAB command window." This section also fails to disclose the visual indication of "the state of the execution list on said model view" required by claim 1 for a number of reasons. First, the reference discusses indicating the current values of the *system's states*, but does not disclose indicating the *state of the execution list* as required by Applicants' claim 1. Secondly, the Simulink5 reference on page 13-20 discusses displaying the system's states in the *MATLAB command window*. In contrast, claim 1 requires indicating visually the state of the execution list on the *model view*. The command window in the MATLAB® software offered by The MathWorks, Inc. of Natick, Massachusetts at the time of the application did not display a model view of the block diagram, and Simulink5 thus fails to disclose the display of an execution list and also fails to disclose the display of an execution list on the model view.

In view of the above arguments, Applicants respectfully request reconsideration and allowance of claim 1.

Claims 2-38 depend from independent claim 1 and, as such, incorporate all of the elements of claim 1. Accordingly, claims 2-38 are allowable for at least the reasons set forth above with respect to claim 1. Applicants therefore respectfully request reconsideration and allowance of claims 2-38.

Independent claim 39 is a medium claim corresponding to independent claim 1 and recites:

"A physical medium holding computer-executable instructions for performing debugging in a graphical modeling and execution environment on an electronic device, said medium comprising:

instructions for providing a model view and an execution list view of a model being executed, said model view showing a plurality of components of said

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model, said execution list view showing an execution list depicting the execution order of methods called during the execution of a time step of said model, said model view interfaced with a debugger; and

instructions for indicating visually the state of the execution list on said model view" [emphasis added].

Applicants submit that the arguments set forth above with respect to claim 1 are also applicable to claim 39. Accordingly, Applicants respectfully request reconsideration and allowance of claim 39.

Claims 40-76 depend from independent claim 39 and, as such, incorporate all of the elements of claim 39. Accordingly, claims 40-76 are allowable for at least the reasons set forth above with respect to claim 39. Applicants therefore respectfully request reconsideration and allowance of claims 40-76.

Amended independent claim 77 recites:

"A system in an electronic device having a graphical design environment, said system comprising:

a debugger, said debugger gathering debug information from the simulation of a model in said graphical design environment;

a model view, said model view displaying a plurality of components of a model and being interfaced with said debugger; and

an execution list view, said execution list view displaying an execution list depicting an execution order of methods called during the execution of a time step of said model, said execution list view state being visually represented on said model view, said execution list view being generated by said debugger" [emphasis added].

As noted above with regard to claim 1, the Simulink⁵ reference fails to disclose either an execution list view that depicts the execution order of methods or a visual representation of the execution list view on the model view. Accordingly, Applicants respectfully request reconsideration and allowance of claim 77.

Claims 78-83 depend from independent claim 77 and, as such, incorporate all of the elements of claim 77. Accordingly, claims 78-83 are allowable for at least the reasons set forth above with respect to claim 77. Applicants therefore respectfully request reconsideration and allowance of claims 78-83.

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CONCLUSION

In light of the above, Applicants submit that all of the pending claims 1-83 are in condition for allowance. Should the Examiner feel that a teleconference would expedite the prosecution of this application, the Examiner is urged to contact the Applicants' attorney at (617) 227-7400.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. MWS-087. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

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Respectfully submitted,

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